

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended): A liquid dispenser apparatus comprising:
a ~~collapsible-molded~~ liquid reservoir;
a ~~compressible~~ metering chamber fluidly connected to said liquid ~~collapsible-molded~~ reservoir with a liquid introduction element;
a liquid flow deflection element;
an inlet unidirectional valve which connects said liquid introduction element to
[[a]] said metering chamber;
a flexible diaphragm ~~capable of substantial conformation to at least part~~
configured to conform to a rigid wall of said metering chamber;
a plunger configured to horizontally displace said flexible diaphragm; and
a liquid exit element connected to said metering chamber having an outlet unidirectional valve.

2-6. (Canceled)

7. (Currently Amended): A liquid dispenser apparatus comprising:
a liquid reservoir;
a metering chamber fluidly connected to said liquid reservoir with a liquid introduction element;

an inlet unidirectional valve which connects said liquid introduction element to
[[a]] said metering chamber;
a flexible diaphragm ~~capable of substantial conformation to at least part~~
configured to conform to a rigid wall of said metering chamber;
a plunger configured to compress and decompress said flexible diaphragm; and
a liquid exit element connected to said metering chamber having an outlet
unidirectional valve.

8-23. (Canceled)

24. (Previously presented): A liquid dispenser apparatus according to claim 7 and
further comprising a dual clamp element.

25. (Currently Amended): A liquid dispenser apparatus according to claim 24
wherein said dual clamp element connects said liquid reservoir to said metering
chamber, and wherein said dual clamp connects said connected reservoir and metering
chamber to an automated system.

26-28. (Canceled).

29. (Currently Amended): A liquid dispenser apparatus according to claim 7,
wherein the liquid reservoir and metering chamber are attached to an automated
system and ~~further comprising an automated biological staining device.~~

30-31. (Canceled)

32. (Previously presented): A liquid dispenser apparatus according to claim 7 and further comprising an internal diaphragm compressor.

33-35. (Canceled)

36. (Previously presented): A liquid dispenser apparatus according to claim 7 and further comprising an internal mechanical stop located in said metering chamber to stop displacement of said metering chamber at an uncompressed position.

37. (Currently Amended): A liquid dispenser apparatus according to claim 7 wherein said flexible diaphragm ~~comprises~~ is configured to move between an uncompressed position and a compressed position.

38-44. (Canceled)

45. (Currently Amended): A liquid dispenser apparatus according to claim 7 and further comprising an actuator ~~to which said~~ configured to move said plunger and said flexible diaphragm ~~is responsive~~.

46. (Canceled)

47. (Previously presented): A liquid dispenser apparatus according to claim 7 and further comprising a compression element and a uncompression element.

48. (Original): A liquid dispenser apparatus according to claim 47 wherein said uncompression element comprises a spring.

49. (Original): A liquid dispenser apparatus according to claim 47 wherein said compression element comprises a manual compression element.

50-51. (Canceled)

52. (Previously presented): A liquid dispenser apparatus according to claim 7 wherein said outlet unidirectional valve comprises:

- a valve disk;
- a valve retainer; and
- a valve membrane.

53-55. (Canceled)

56. (Currently Amended): A liquid dispenser apparatus according to claim 52 wherein said valve disk is arranged to form a fluid seal with said valve membrane and
~~membrane comprises a seal.~~

57-58. (Canceled).

59. (Previously presented): A liquid dispenser apparatus according to claim 7 and further comprising a seal between said reservoir and said liquid introduction element.

60. (Original): A liquid dispenser apparatus according to claim 59 wherein said seal is selected from a group consisting of a radial o-ring and flange o-ring.

61-65. (Canceled)

66. (Currently Amended): A liquid dispenser apparatus according to claim 7 and further comprising a reservoir housing around said reservoir.

67-72. (Canceled)

73. (Currently Amended): A liquid dispenser apparatus according to claim 7 wherein said reservoir is ~~comprises~~ an interchangeable reservoir.

74. (Currently Amended): A liquid dispenser apparatus according to claim 7 wherein said reservoir is ~~comprises~~ a refillable reservoir.

75-76. (Canceled)

77-86. (Canceled)

87. (Original): A liquid dispenser apparatus according to claim 7 wherein said plunger is configured to horizontally displace said diaphragm.

88-95. (Canceled)

96. (Currently Amended): A method of dispensing liquid comprising the steps of:
~~establishing liquid in a reservoir;~~
~~providing a metering chamber having a flexible diaphragm;~~
displacing ~~said a~~ flexible diaphragm inside of a metering chamber from a compressed position to an uncompressed position, said metering chamber being fluidly connected to a liquid reservoir;
wherein said displacing step opens ~~opening~~ an inlet unidirectional valve ~~which and~~ allows an amount of liquid to flow from said reservoir to said metering chamber through said inlet unidirectional valve; and
~~flowing an amount of liquid from said reservoir to said metering chamber through said inlet unidirectional valve;~~
displacing said uncompressed diaphragm to a compressed position conforming said diaphragm against a rigid wall of said metering chamber;
wherein said displacing step:
closes ~~closing~~ said inlet unidirectional valve; and

~~opens opening an outlet unidirectional valve and distributes said~~
~~amount of liquid from said metering chamber through said outlet unidirectional valve.~~

~~substantially conforming said diaphragm against at least part of said metering-~~
~~chamber;~~

~~distributing said amount of liquid from said metering chamber through said outlet-~~
~~unidirectional valve; and~~

~~closing said liquid output unidirectional valve~~

97-169. (Canceled)

170. (New) A liquid dispenser apparatus according to claim 1, wherein the inlet unidirectional valve is arranged orthogonal to the outlet unidirectional valve.

171. (New) A liquid dispenser apparatus according to claim 171, wherein the inlet unidirectional valve is an umbrella valve.

172. (New) A liquid dispenser apparatus according to claim 7, wherein the inlet unidirectional valve is arranged orthogonal to the outlet unidirectional valve.

173. (New) A liquid dispenser apparatus according to claim 172, wherein the inlet unidirectional valve is an umbrella valve.